LITTLE KNOWN ANTHOMYID FLIES THAT COM-MONLY OCCUR ON THE CATKINS OF WILLOW (MUSCIDAE, DIPTERA).

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Recent collecting on Long Island has disclosed the presence of four small anthomyid flies feeding on the catkins of willow, *Salix discolor* Muhl. Two of these have already been recorded, namely, *Hylemyia* (*Egle*) muscaria Fabr. and longipalpis Mall., whilst two are herein described as new. In attempting the task of naming these specimens three additional species were encountered which belonged to the same group, namely bicaudata Mall., fuscohalterata Mall., and parva Rob.-Desv. The latter species was recorded by Stein(10)¹ as occurring in California. Through the kindness of Dr. Aldrich I have been able to examine Stein's specimens, and I doubt whether they are conspecific with the European specimen of parva sent to me by Herr Ringdahl.

Egle was first erected as a genus by Robineau-Desvoidy (6) in 1830 for the reception of twenty-one species. Little is known and little remains of the specimens described by Robineau-Desvoidy, with the result that the genus as he knew it is difficult to recognize. Coquillett (2) in 1910 designated parva, the twentieth species, as the type of the genus, and thereupon placed the genus in synonomy with Pegomyia Rob.-Desv. Schnabl and Dziedzicki (7) in 1911 retained the generic conception of *Eqle*, in support of which they placed great faith in the delimiting characters of the male genitalia. Stein (9) in 1915 and Séguy (8) in 1923 placed Egle in subgeneric rank within the genus Chortophila Macquart. Malloch (5) in 1918 erected the genus Xenophorbia for the reception of muscaria on characters which in nearly all cases are equally applicable to the species parva. His use of the name Eqle to denote the radicum-group is a misnomer and should be construed as Paregle Rob.-Desv. Johnson (4) listed Egle and Chortophila is subgenera of Hylemvia Rob.-Desv., a classification which perhaps best meets the situation as at present understood. For until the vast number of newly described species of Hylemvia have become more fully known the maintenance of many Desvoidian genera may well await a better occasion for recognition.

¹ Reference to be found in literature cited on page 82.

In the meantime, as a working hypothesis, his names may be used effectively to designate minor groupings within the genus *Hylemyia sens. lat.*

All of the above species with the exception of one of the new forms readily conform to the characteristics of the subgenus *Egle* Rob.-Desv. They are characterized by the possession of the following adult characters: third antennal segment of short, squat proportions; antennae at base separated by a pronounced facial elevation; buccae and oral margin, in profile, protruded beneath the antennae; fore tarsi noticeably compressed laterally; female with the cephalic pair of paraorbital bristles proclinate, parafrontal bristles arranged in two separate series or rows; male with fifth sternum largely polished and glossy, and sparsely bristled; male copulatory appendages possess relatively large cerci (upper forceps) which become conspicuously attenuated distad, the gonostyli (lower forceps) are short, curved and stout (figs. 1-6.)

KEY TO SPECIES (MALES)

- - bristles; apex of antennae reaches a level with oral margin which is not protruded cephalad when viewed in profile; fore tarsi not compressed laterally......salicola n. sp.

4. Fifth sternum with a group of longish erect bristles on each side and at base of processes; palpi spatulate; posterior surface of fore femora clothed with dense fine bristles.

bicaudata Mall.

Fifth sternum with no long erect bristles on each side and at base of processes; palpi clavate; posterior surface of fore femora clothed with bristles of normal appearance.....5

5. Buccae with a serial tuft of ten robust upcurving bristles invading the cheek; ventral margin of eye reaching to a level with oral vibrissae when viewed in profile; width of cheek at narrowest equal to breadth of third antennal segment.

parva Rob.-Desv.

- - Mid femur with a single series of posteroventral bristles on proximal two-thirds, and 2 or 3 additional basal bristles on posterior surface; each tergum with a broad subtriangular mark dilating cephalad along the tergal margin only.

tantalisa n. sp.

FEMALES

 Thorax with 3 presutural and 4 postsutural dorsocentral bristles; posterior notopleural bristle with basal setulae; scutellum with numerous accessory discal setulae.

muscaria Fabr.

Thorax with 2 presutural and 3 postsutural dorsocentral bristles; posterior notopleural bristle with no basal setulae; scutellum with no accessory discal setulae.....2

- 2. Prealar short and noticeably stout, spinelike; not longer than half length of posterior notopleural bristle; proboscis very fleshy; palpi broadly spatulate; hind tibia with no anteroventral bristles......salicola n. sp.

Hind femur with no bristles on proximal half of posteroventral surface......4

- 4. Hind tibia with a median posteroventral seta..*bicaudata* Mall. Hind tibia with no setae on posteroventral surface......5
- 5. Apical dorsal bristle of hind tibia exceeds half length of hind basitarsus; thorax with 3 obscure yellowish brown vittae.

longipalpis Mall.

Apical dorsal bristle of hind tibia not exceeding half length of hind basitarsus; thorax non-vittate.....tantalisa n. sp.

Hylemyia (Egle) muscaria Fabricius

1775. ?Stomoxys muscaria Fabr. Ent. Syst., vol. 4, p. 395.
1838. Anthomyza brevicornis Zett. Ins. Lapp. p. 683, no. 99.
Records:—1 ♂ Ithaca, 20.4.95; 1 ♂ 28.4.15; 3 ♂ Oakwood, S. I., 22.4.20 (Colls. J. Bequaert and E. J. Burns): 4 ♂ 3 ♀ Baiting Hollow, Riverhead, L. I., 22.4.23; 3 ♀ 29.4.23; 3 ♀
13.4.24; 6 ♂ 2 ♀ 8.4.25; 1 ♀ 24.4.26; 2 ♂ 20.4.27. 27 specimens, 17 males and 10 females.

This species is readily distinguished from others of the same group that commonly occur on willow catkins by its larger size and by the characters indicated in the key. Occasionally specimens possess only three instead of four postsutural dorsocentral bristles. The proboscis of the female is decidedly slender in contrast to the stout and fleshy proboscis of the remaining species.

Bezzi and Stein (I) in their catalogue of the palearctic diptera listed the species as *muscaria* (Meig. nec Fabr.). The doubt expressed was most probably owing to the apparent discrepancy in the original description which describes the antennae as plumose, *"antennis plumatis."* This expression makes it questionable whether this is the same species referred to by Fabricius. The identity of the species may be more satisfactorily established by reference to Zetterstedt's description of *Anthomyza brevicornis*.

Séguy (8) makes the interesting note that the larvae of *muscaria* have been found in the catkins of willow.

Hylemyia (Egle) parva Robineau-Desvoidy

1830. Egle parva Rob.-Desv. Essai Myod. p. 590, no. 20.

Male. Blackish species; parafrontals, parafacials and cheeks silvery pruinescent. Antennae and palpi black.

Mesonotum and scutellum blackish, subshining; when viewed from above and behind with no distinct vitta: humeral and notopleural callosities light grayish, pollinose. Abdomen cinereous gray, when viewed from above and behind showing a broad black subtriangular mark on each tergum, fusing cephalad with the marginal fascia. Legs black, pulvilli tinged. Halteres brownish black. Calyptrae tinged, outer margin infuscated. Wings faintly and uniformly tinged, veins brownish.

Head with eyes separated at narrowest distance by about width of anterior ocellus: frontal vitta with two pairs of cruciate setulae, one weak pair immediately cephalad of anterior ocellus and a more distinctive pair caudad of caudal pair of parafrontal bristles. Parafrontals with five or six pairs of bristles. Parafacials at base of antennae about equal in breadth to width of third antennal segment, slightly receding and narrower ventrad: buccae prominent and protruded cephalad, oral margin slightly produced beneath antennae. Cheek ventrad of eve margin equal in breadth to width of third antennal segment, the anterior half invaded by an irregular series of long, robust upcurving bristles. Antennae separated at base by a broad rounded facial elevation, second antennal segment one and a half times as long as greatest width: third antennal segment slightly longer than broad. Arista minutely pubescent, thickened on proximal third. Palpi and proboscis long and slender, the distal portion of latter as long as fore tibia. Thorax with three pairs of longish presutural acrostical bristles. Dorsocentral bristles 2:3. Prealar bristle shorter than posterior notopleural bristle. Posthumeral bristles duplicated. Sternopleural bristles 1:2. Scutellum devoid of discal accessory setulae. Abdomen depressed, with margins subparallel, caudal segments gradually narrowed; terga subequal. Fifth sternum glossy, polished, with a ventrocentral tuft of hairs on caudal margin between the processes. Processes with a series of fine erect hairs encircling the inner margin. Fore tibia with posterior surface clothed with longish semierect setulae, bristles obscure, apical posteroventral bristle fine and pointed. Mid femur on proximal half with a series of anteroventral bristles, and an irregular double series of long posteroventral bristles. Mid tibia with one posterodorsal and one posteroventral bristle, apical bristles few and short. Hind femur with an entire series of anteroventral bristles and a series of fine shorter bristles on proximal two-thirds of posteroventral surface.

Hind tibia with 5 anteroventral, 4 anterodorsal, 3 posterodorsal bristles and a median series of semierect setulae on posteroventral surface. Tarsi compressed laterally; claws and pulvilli subequal. Wings pointed, with costal thorn minute: veins R. 4+5 and M. 1+2 subparallel: *m-cu* cross vein slightly sinuous. Length, 4 mm.

Record :--- I Hoz (Sweden) 1.5.12 (Coll. O. Ringdahl).

This European species, so far as I know, has not been correctly recorded as appearing in North America. The above description is based on a single European specimen kindly furnished by Herr Oscar Ringdahl. The male specimens from California determined by Stein as *parva* differ noticeably from the European specimen in the appearance of the processes of the fifth sternum and in the bristling of the mid femur and cheeks. These specimens are slightly bleached and teneral, and thus do not lend themselves readily for positive identification. In *parva* the inner border of the processes possesses a marginal series of fine erect hairs, and at the midventral plane the inner margin has a distinctive tuft of hairs; the mid femur has an irregular double series of long bristles on the proximal half of posteroventral surface; the anterior half of cheek (buccae) is invaded by a series of robust upcurving bristles. In contrast, the processes of the fifth sternum in Stein's specimens possess an apical tuft of marginal hairs, and have no central tuft on the midventral plane; the mid femur has a single series of short weak bristles on proximal half of posteroventral surface; the cheeks are bare, the bristles being confined to the ventral margin in single series. The specimens from Staten Island and Long Island which were recorded by me (3) as parva are undoubtedly *longipalpis*. The male of the latter species may be readily distinguished from that of *parva* by the abnormally robust bristling of the anterior and posterior surfaces of hind femora.

Hylemyia (Egle) bicaudata Malloch.

1920. Hylemyia bicaudata Mall. Trans. Amer. Ent. Soc., vol. 46 no. 802, p. 193.

Record:—I & Ithaca, 26.4.14; I & 20.4.20 (Coll. Shannon).

The male of this species may be readily distinguished from those of closely allied forms by the possession of long semierect bristles at the base of each process of the fifth sternum. There is a slight resemblance between *longipalpis* and *bicaudata* in this respect, but the bristles in the former case are much shorter and weaker. The halteres in the paratype from Virginia and in the specimen from Ithaca are blackish and not yellow as in the description. The species is recorded as having been captured on the catkins of *Salix tristis* Ait. I am indebted to Mr. J. R. Malloch for his helpful opinions concerning the identity of this species, and to Mr. E. T. Cresson for the loan of a paratype of *bicaudata*.

Hylemyia (Egle) fuscohalterata Malloch

- 1920. Hylemyia fuscohalterata Mall. Ohio Journ. Sci., vol. 20 no. 7, p. 279.
- Record :--- 1 & I & Katmai, Alaska, June 1917. (Coll. J. S. Hine.)

Through the kindness of Prof. Hine I was able to examine the type and allotype of *fuscohalterata*. The male specimen differs slightly from the description in that the fore tibia has a distinct fine median and apical posteroventral bristle. The species most closely resembles *tantalisa*. In the male sex they may be distinguished by the character of the fifth sternum, the form of the abdominal vitta, and in the bristling of the mid femur: in the female sex the most significant difference is found in the bristling of the hind femur. These differences are dealt with in detail in the paragraphs devoted to *tantalisa*.

Hylemyia (Egle) tantalisa n. sp.

Male. Blackish species; parafrontals, parafacials, and cheeks silvery pruinescent with blackish reflections, face opaque, grayish; antennae and palpi blackish. Thorax, viewed from above and behind, with mesonotum and scutellum with blackish infuscation which tends to obliterate the dorsal markings; humeral areas light grayish, mesonotum with an obscure broad central vitta and lateral markings, sublaterals narrow and indistinct. Abdomen, viewed from above and behind, cinerous gray, opaque, each tergum with a broad, blackish subtriangular mark, expanding cephalad to fuse with the marginal fascia; fifth sternum largely polished and glossy. Legs blackish, pulvilli grayish. Wing membrane faintly and uniformly tinged, the basal area with blackish infuscation; veins chocolate brown. Calyptrae whitish, margins grayish tinged. Halteres blackish. Head with eyes

separated by about the diameter of anterior ocellus; parafrontals narrowly separated below the ocellus by the frontal vitta. The latter with a minute pair of cruciate hairs below the anterior ocellus and a more distinctive pair caudad of the caudal pair of parafrontal bristles. Parafrontals with four or five pairs of weak bristles. Parafacials in profile at base of antennae scarcely equal in width to breadth of third antennal segment, narrowed at middle owing to the concavity of facial margin; cheeks with buccae moderately prominent, scarcely portruded beyond a level with face at base of antennae, width of cheeks ventrad of eye narrower than width of parafacial at base of antennae; marginal bristles fine, confined in single series along ventral margin, with two or three upturned bristles on buccal area; oral margin slightly protruded. Antennae at base separated by a rounded facial prominence; arista swollen at base, minutely pubescent. Palpi slender, with few fine bristles. Thorax with acrostical bristles irregularly paired, two or three presutural and postsutural pairs, the former slightly longer than the latter; dorsocentral bristles, 2:3. Posthumeral and prealar bristles duplicated, the latter shorter than posterior notopleural bristle. Sternopleural bristles 1:3. Abdomen depressed, conical, margins subparallel, caudal segments in profile thickened. Fifth sternum broadly and deeply incised on caudal margin, very sparsely bristled; processes with three short weak bristles and an apical tuft of fine setae on inner margin. On the membrane between the processes are paired chitinous areas bearing setulae (fig. 6). Fore tibia with a fine pointed apical bristle and two median posteroventral bristles which tend to become obscured owing to the erect position of the tibial setulae. Mid femur with a continuous series of short anterodorsal and anteroventral bristles which gradually become shorter apicad; posteroventral surface with longer erect bristles on the proximal twothirds, in addition there is a short duplicating series of two or three basal bristles, the apical third of posteroventral surface bare. Mid tibia with one median posterodorsal bristle. Hind femur with a continuous series of anteroventral bristles which are much stronger on the distal half than on proximal half; posteroventral surface with a series of fine sparsely set short bristles on proximal two-thirds: hind tibia with 3 or 4 anteroventral, 4 to 6 unequal anterodorsal, and 3 or 4 posterodorsal bristles, posteroventral surface with a median series of semierect setulae. Tarsi about equal in length to their respective tibia, claws and pulvilli equal in size on fore, mid, and hind legs. Wing with costal thorn small but distinct; veins R. 4+5 and M. 1+2 slightly divergent toward wing margin; m-cu cross vein slightly sinuate. Length, 3.5 mm.

Female similar to male, differing essentially in the following characters:—head with parafrontals, parafacials and cheeks grayish pruinescent. Frontal vitta reddish. Thorax and abdomen opaque, grayish, unmarked. Mesonotum slightly brownish infuscated. Halteres reddish yellow. Wings clear throughout.

Head with each parafrontal and frontal vitta nearly equal in width. Cruciate bristles present. Fore tibia with no median anterodorsal bristle, with a median posterior bristle; mid femur with two or three short bristles on basal half of posteroventral surface; mid tibia with one anterodorsal, two posterodorsal and two posteroventral short bristles; hind femur with only three or four strong bristles on apical half of anteroventral surface, posteroventral surface bare: hind tibia with two or three anteroventral, three or four anterodorsal and three posterodorsal bristles.

Type and allotype in U. S. National Museum.

This species agrees very closely with fuscohalterata. In my opinion it differs however in the following particulars. In the male the fifth sternum possesses a different arrangement of bristles as shown in figure 6. The form of the abdominal vitta also differs in that in tantalisa each tergum possesses a broad subtriangular mark, whereas in fuscohalterata each tergum possesses a broad dorsocentral vitta which dilates caudad and cephalad along the tergal margins. The bristling of the mid femur also shows a rather noticeable variation in that in *tantalisa* the posteroventral surface possesses a single series of posteroventral bristles and in addition two or three basal bristles on posterior surface, whereas in fuscohalterata the accompanying or duplicating series of bristles extend for the full length of the posteroventral series. In the female the most significant differences appear in the bristling of the hind femur. In tantalisa the proximal half of posteroventral surface is bare, whereas in *fuscohalterata* there is a series of four or five fine sparsely set bristles.

Hylemyia (Egle) longipalpis Malloch

1924. Hylemyia longipalpis Mall. Psyche, vol. 21, no. 5, p. 197.

Records: — I & Ithaca, May: I & Oakwood, S. I., 22.4.20 (E. J. Burns): 6 & 23 & Baiting Hollow, Riverhead, L. I., 22.4. 23; I & 12 & 27.4.23; 5 & 3 & 29.4.23; I & 13.4.24; IO & 2 & 8.4.25; I & 2 & 2.4.26; 5 & 7 & 24.4.26; 3 & 4.5.26; I & I5.4.27; I & 3 & 20.4.27; I3 & IO & 22.4.27; 4 & 4 & I.5.27. I19 specimens, 50 males, 69 females.

The male of this species may be readily distinguished from those of its closest relatives by the strikingly more numerous and robust bristles on the hind femur. The female is not to be so readily distinguished as in the case of the male. Specimens average a larger size than any of the species mentioned except *muscaria*. Frequently specimens possess three well defined vittae on the mesonotum of a tawny color; this character will vary all the way to nearly complete obscurity. The species was formerly recorded by me as *parva*.

Hylemyia (Chortophila) salicola n. sp.

Male. Blackish species, parafrontals, parafacials and cheeks with faint whitish pruinescence: antennae and palpi blackish. Thorax subshining, viewed from above and behind, the mesonotum has a broad black median vitta and narrow sublaterals; scutellum blackish; humeral regions lighter colored. Abdomen subshining, cinereous gray, with dark obscure fasciae and no definite dorsal markings on terga. Legs blackish. Wings smoky, more densely tinged basad. Veins dark chocolate brown; halters blackish; calyptrae white.

Head with eyes separated at narrowest by a distance slightly greater than anterior ocellus. Parafrontals narrowly separated cephalad of anterior ocellus, the frontal vitta gradually expanded toward base of antennae. Parafrontals with three or four pairs of weak bristles, cruciate setulae distinct. Head in profile with eyes large, parafrontals and parafacials scarcely equal in width to one half breadth of third antennal segment. Cheeks ventrad of eye equal in width to breadth of parafacials at base of antennae. Vibrissal angle not protruded cephalad beyong the level of head at base of antennae. Antennae separated at base by a slight facial ridge. Third antennal segment but little longer than second, about as long as its greatest breadth, apex reaching to level with oral margin. Arista noticeably swollen at base. Palpi spatulate apicad; proboscis slender. Thorax with few accessory setulae on mesonotum, scutellum devoid of acessory setulae. Mesonotum with three pairs of presutural acrostical bristles, the postsutural acrosticals not so regularly paired and much weaker than those of presutural bristles. Posthumeral bristles duplicated. Prealar bristle short and stout, about equal to half length of posterior notopleural bristle. Sternopleural bristles, I:2. Abdomen depressed, margins subparallel, with marginal bristles poorly defined except on fifth segment. Tergal setae noticeably longer and stronger laterad than on the dorsum; caudal segments slightly thickened when viewed laterad. Fifth sternum polished, glossy, processes beset with a series of five or six hairs (fig. 3). Legs with weak bristles, especially the apical tibial bristles. Fore tibia with a median posterior bristle, apical posteroventral bristle weak, scarcely distinguishable from the setulae. Mid femur with an entire series of weak anteroventral bristles and a duplicate series of five or six bristles on the proximal two-thirds of posteroventral surface: mid tibia with one or two posterodorsal bristles. Hind femur with an entire series of anteroventral bristles which become considerably weaker proximad, posteroventral surface with a series of sparsely set weak bristles on proximal two-thirds. Hind tibia with a median series of rather pronounced setulae on anteroventral surface, bristles absent; with two or three distinctive anterodorsal, and two weak posterodorsal bristles, occasionally a third. Tarsi with segments two, three and four, short and beadlike. Pulvilli and claws small. Wings with veins R. 4 + 5 and M. 1 + 2 slightly divergent to margin; *m-cu* cross vein straight. Costal thorn minute. Length, 2.25 to 2.5 mm.

Female as male, differing essentially as follows: Lighter in color, cinereous gray. Abdomen with no distinctive vitta or marks. Halteres tinged with reddish. Head, viewed from above, with frontal vitta reddish, at least anteriorly, but little wider on the average than each parafrontal. Cruciate bristles present, minute. Palpi more distinctively spatulate. Proboscis stout and fleshy. Abdomen sparsely and weakly bristled. Fore tibia with posterior bristle situated basad of middle: mid tibia with or without anterodorsal bristle: hind femur with two or three strong bristles on apical third of anterodorsal surface, and one or two weak basal posteroventral bristles: hind tibia with two or three posterodorsal bristles. Records :— I & 2 & Baiting Hollow, Riverhead, L. I., 8.4.25; I & 8.5.25; 7 & 2.5.26; I & 4.5.26; I & & 2 & 24.4.26; 25 & I & I 5.4.27; 4 & I6 & 22.4.27. 78 specimens, 49 males, 29 females.

Type and allotype in U. S. National Museum.

This species is closely allied to those of the subgenus Egle, having the characteristic squat proportions to the third antennal segment; the fifth sternum in male is polished and sparsely bristled. It however does not possess the characteristic protruded buccal area and oral margin, nor the laterally compressed segments of the fore tarsi as in *parva*. The species may be readily separated from its closest allies by the lack of bristles on the anteroventral surface of hind tibia; the antennae are not separated at base by a prominent facial elevation; and by the characteristic abnormally stout prealar bristle.

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EXPLANATION OF PLATE II

- Fig. 1. Dorsal (or caudal) aspect of male copulatory appendages of (*Chortophila*) salicola.
- Fig. 2. Lateral aspect of male copulatory appendages of *(Chortophila) salicola.*
- Fig. 3. Ventral aspect of sternum 5 of (Chortophila) salicola.
- Fig. 4. Dorsal (or caudal) aspect of male copulatory appendages of (Egle) tantalisa.
- Fig. 6. Ventral aspect of sternum 5 of (Egle) tantalisa.

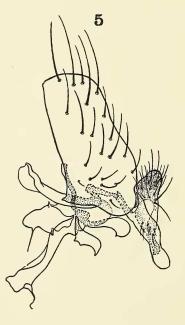


Fig. 5. Lateral aspect of male copulatory appendages of (*Egle*) tantalisa.